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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,836	07/21/2006	Mats Lindgren	opcon.830001.US0	6180
26582	7590	11/06/2007		
HOLLAND & HART, LLP P.O BOX 8749 DENVER, CO 80201			EXAMINER TRIEU, THERESA	
			ART UNIT 3748	PAPER NUMBER
			MAIL DATE 11/06/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

CT

<b>Office Action Summary</b>	<b>Application No.</b> 10/551,836	<b>Applicant(s)</b> LINDGREN, MATS	
	<b>Examiner</b> Theresa Trieu	<b>Art Unit</b> 3748	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 October 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-10, 13-15, 17-20 is/are rejected.
- 7) ☒ Claim(s) 5-7, 11, 12 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 October 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                     |                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                         | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>Oct. 3, 2005</u> | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Priority*

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “housing with two opposites walls; nominal pressure angle is smaller than 15 degree” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Art Unit: 3748

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "center distance  $A_{AB}$  (Fig. 2),  $A'_{AB}$  (Fig. 3);  $A_{CD}$  (Fig. 4). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1, 3, 5, 8, 16 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claims 1 and 8 recite the limitation "the center distances" on page 2, line 24, and page 4, line 21. Claim 5 recites the limitation "the normal center distance" on page 3, line 9. There is insufficient antecedent basis for this limitation in the claim.

- Claims 3, 16 and 20, the limitation 'around' render the claim indefinite since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired.

#### ***Claim Objections***

6. Claims 1-20 are objected to, in that their subject matter needs to be incorporated into the specification and the drawings.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-4, 8-10, 13, 17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rinder (Patent Number 4,643,654) in view of Nozue (Publication Number JP 60-085284).

Regarding claims 1-3, 8, 9, 13, 17 and 20, as shown in Figs. 1 and 2, Rinder discloses a double-screw compressor for supplying gas to a gas consumer and comprising two interacting

Art Unit: 3748

rotors 10, 20 for compressing the gas and a toothed gearing, which toothed gearing comprises: two parallel gearwheel shafts, which are each connected to one of the rotors and mounted rotatably in the opposite end walls with a nominal center distance, two interacting gearwheels which are fixed on a respective gearwheel shaft each gearwheel having involute teeth corresponding to one another designed so as, when engagement between teeth on their respective wheels takes place, to form a nominal backlash (see Fig. 1) between the teeth interacting during the engagement, when the gearwheel shafts are located at the nominal center distance from one another, characterized in that each of the gearwheels is designed with one and the same nominal pressure angle which is smaller than 15 degree (see col. 7, line 36-40) in order to minimize the deviation of the actual backlash from the nominal backlash when the center distance deviates from the nominal center distance as a consequence of a change in temperature of one of the parts included in the screw compressor; the two gearwheels 10, 20 being designed with a nominal pressure angle which lies in the range 8 degree to 15 degree; the two gearwheels being designed with the nominal pressure angle of around 10 degree; the gas being air. However, Rinder fails to disclose the material of the housing and the material of the gearwheels having different thermal expansion coefficients. Note that the limitation “for supplying gas to a consumer” is an intended use. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 370 F.2d

Art Unit: 3748

576, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 312 F.2d 937, 939, 136 USPQ 458, 459 (CCPA 1963).

Regarding claims 1, 4, 8 and 10, Nozue teaches that it is conventional in the compressor art to utilize a housing 10; 120 with two opposite end walls 30, 40; 130, 140 which are made of a first material being aluminum and two gearwheels 50; 150, 160 being made of a second material being steel (see abstract); the first and second materials having different thermal expansion coefficients. It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the aluminum housing and steel gearwheels, as taught by Nozue in the Rinder apparatus, since the use thereof would have improved the abrasion-resistance of housing and two gearwheels.

8. Claims 14, 15, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rinder in view of Nozue as applied to claim 1 above, and further in view of design choice.

The modified Rinder device discloses the invention as recited above; however, the modified Rinder fails to disclose the gas consumer being a fuel cell/ combustion engine.

It is examiner's position that one having ordinary skill in the double-screw compressor art, would have found it obvious to utilize the compressed air being supplied to a fuel cell/ combustion engine, since they are merely design parameters, depending on being used for a particular purpose or solving a stated problem. Moreover, there is nothing in the record which establishes that the claimed gas consumer being a fuel cell/ combustion engine device under such conditions, presents a novel or unexpected result (See *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975)).

Art Unit: 3748

***Allowable Subject Matter***

9. Claims 5-7, 11, 12 and 16 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Prior Art***

10. The IDS (PTO-1449) filed on Oct. 3, 2005 has been considered. An initialized copy is attached hereto.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of five patents: Menssen (U.S. Patent Number 4,028,026), Kasuya et al. (U.S. Patent Number 4,492,546), Rao et al. (U.S. Patent Number 5,554,020), Heozer (U.S. Patent Number 7,008,201), and Suzuki (Publication Number JP 56-044492), each further discloses a state of the art.

***Communication***

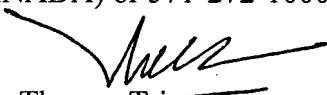
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Theresa Trieu whose telephone number is 571-272-4868. The examiner can normally be reached on Monday-Friday 8:30am- 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on 571-272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3748

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TT  
November 1, 2007



Theresa Trieu  
Primary Examiner  
Art Unit 3748